

Instructions: This is a list of some material that is essential prerequisite for this course. That is, your instructor expects that you have a definite idea of the notions expounded below and that you be able to solve the problems below without any review. If you find yourself having trouble on some items below you should seek immediate help from your instructor or from the tutors in the Learning Laboratory.

Essential prerequisites include:

- (a) Ability to convert decimals into fractions and viceversa.
- (b) Solving linear equations and inequalities.
- (c) Graphing linear equations.
- (d) Solving percent problems.

You should be able to quickly answer all questions below without needing any review.

1. Complete the following table.

Fraction	Decimal	Percent
$\frac{7}{40}$		
	0.002	
		$71\frac{4}{7}\%$

2. Perform the indicated operations and simplify.

- (a) $1 - (0.2)(0.3)$
- (b) $\frac{9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}{7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 \cdot 2 \cdot 1}$
- (c) $\frac{7}{8x} + \frac{5}{6x}$
- (d) $\left(\frac{4}{x-1}\right)\left(\frac{5}{6xy}\right)$

3. Evaluate:

- (a) $C = \frac{5}{9}(F - 32)$ when $F = 27.5$.
- (b) $t = \frac{|x_1 - x_2|}{s\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$ when $x_1 = 6$, $x_2 = 8$, $s = 2$, $n_1 = 20$ and $n_2 = 25$.

4. Solve for x :

- (a) $2x + 5(x - 1) = 3x + 9$

$$(b) D = \frac{R(100 - x)}{100}$$

$$(c) |2x - 7| < 9$$

5. Solve

$$(a) H = \frac{kA(T_1 - T_2)}{L} \text{ for } T_2.$$

$$(b) -z < \frac{x - \mu}{\frac{\sigma}{\sqrt{n}}} < z \text{ for } \mu, \text{ assuming } \sigma > 0.$$

6. Plot at least five points and sketch the graph of $y = 2x - 1$.

7. Find the equation of the line:

- (a) passing through $(-1, 5)$ and $(2, 3)$
- (b) x -intercept $(4, 0)$ and y -intercept $(0, 3)$
- (c) x -intercept $(2, 0)$ and infinite slope
- (d) x -intercept $(3, 0)$ and slope -2 .

8. Solve the following problems:

- (a) What is 60% of 18?
- (b) 21 is what percent of 35?
- (c) 24 is 20% of what number?
- (d) The cost of a meal at a restaurant, including a 15% tip, was \$36.80. What was the cost of the meal excluding the tip?